



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,303	11/07/2001	Philipp Harald Nagel	6474	4511

7590 10/21/2003

Samuels, Gauthier & Stevens LLP  
225 Franklin Street, Suite 3300  
Boston, MA 02110

EXAMINER

TRAN, DALENA

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/037,303 Examiner Dalena Tran	NAGEL, PHILIPP HARALD Art Unit 3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 01 August 2003.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-17 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) All b) Some \* c) None of:

    1. Certified copies of the priority documents have been received.

    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    \* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.

4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

**DETAILED ACTION**

**Notice to Applicant(s)**

1. This office action is responsive to the amendment filed on 8/1/03. Claims 1-17 are pending.

The prior art submitted on 8/1/03 has been considered.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-17, are rejected under 35 U.S.C.103(a) as being unpatentable over Meek et al. (6,366,927) in view of Chojnacki et al. (6,366,851), and Yamamoto et al. (6,438,494).

As per claims 1 and 9, Meek et al. disclose a vehicle navigation system that receives sensor data from a plurality of sensors, and provides a map image that is presented on a display, system comprising: a navigation map data memory that includes map data indicative of roadways stored geographic features that are other than straight form (see the abstract), and a navigation processing unit that receives the sensor data, and requests map data from navigation map data memory associated with the sensor data, and computes the map image from map data (see columns 1-2, lines 13-57). Meek et al. do not disclose Cornu spiral form. However, Meek et al. disclose roadways stored geographic features that are other than straight form, and it is obvious that geographic features that are other than straight form can include clothoids curves as disclose in Chojnacki et al. (column 27, lines 44-55). Also, as disclose in Yamamoto et al., a

clothoid curve is a cornu spiral form (column 1, lines 22-23). Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Meek et al. by combining geographic features that are other than straight form can include different type of road form such as cornu spiral form for accurately store a curvature transition curves of geographic feature as river and curve roads, thereby resulting in further reduction in data storage requirement.

Also as per claims 2 and 10, Yamamoto et al. disclose map data includes data indicative of a unit Cornu spiral (see columns 1-2, lines 53-25).

As per claims 3-4 and 11-12, Meek et al. do not disclose Cornu spiral polynomial coefficients. However, Yamamoto et al. disclose navigation processing unit computes map image using Cornu spiral polynomial coefficients stored in navigation map data memory, and terms of polynomials of the unit Cornu spiral are stored in navigation map data memory and map image is computed using terms of polynomials of the unit Cornu spiral (see columns 9-10, lines 19-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Meek et al. by combining computes map image using Cornu spiral polynomial coefficients stored in navigation map data memory, and terms of polynomials of the unit Cornu spiral are stored in navigation map data memory and map image is computed using terms of polynomials of the unit Cornu spiral for accurately determine a Cornu spiral form of roadways and provide an accurate map image.

Also as per claims 5 and 13, Yamamoto et al. disclose terms of polynomials are associated with Taylor series expressions indicative of Cornu spiral (see columns 2-5, lines 26-30; and columns 6-7, lines 14-42).

As per claims 6 and 14, Meek et al. do not disclose a formula form for cornu spiral.

However, Yamamoto et al. disclose cornu spiral is of the form  $l = K a^{\frac{2}{3}}$ , where  $l$  is indicative of arc length and  $K$  is indicative of curvature (see columns 5-6, lines 60-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Meek et al. by combining a formula form for cornu spiral for accurately converting a road map into a suitable output format for curvature of road.

As per claims 7-8 and 15-16, Meek et al. disclose the form of the navigation map are derived for roads, railroad lines, rivers, lakes, and similar cartographic parameters (see columns 2-4, lines 57-52). Meek et al. do not disclose coordinates of the unit Cornu spiral stored in a table. However, Yamamoto et al. disclose navigation map data memory includes coordinates of the unit Cornu spiral stored in a table, from which all the Cornu spirals of the navigation map are derived, data memory includes coordinates of the unit Cornu spirals stored in a table (see columns 7-9, lines 46-18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Meek et al. by combining disclose coordinates of the unit Cornu spiral stored in a table for accurately calculate intersection of the line of a road for generating a road map image for a user correctly.

Claim 17, is method claim corresponding to system claims 1, and 9 above. Therefore, it is rejected for the same rationales set forth as above.

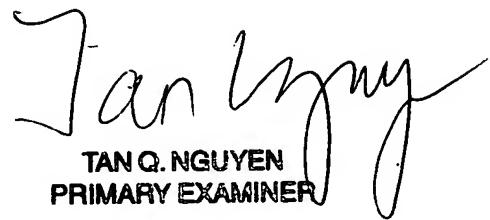
#### Remarks

4. Applicant's argument filed on 8/1/03 has been fully considered and they are deemed to be persuasive. However, upon updated search, the new ground of rejection has been set forth as above.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on 703-308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.



TAN Q. NGUYEN  
PRIMARY EXAMINER

/dt  
October 16, 2003